

Post-Censal Population Estimates By Race Categories: Lessons Learned

Mark Flotow

Illinois Center for Health Statistics

Illinois Department of Public Health

CDC Assessment Initiative &
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Cancer figures for metro Atlanta revised

 By [DAVID WAHLBERG](#)
 Atlanta Journal-Constitution Staff Writer

Atlanta's reputation as the nation's epicenter for cancer among blacks has been found to be largely undeserved. But that doesn't mean blacks are not at greater risk, cancer experts say.

Black cancer rates were thought to be higher — and white cancer rates slightly lower — than they are now believed to be because the U.S. Census Bureau greatly underestimated metro Atlanta's African-American population in the late 1990s. The problem runs nationwide, but it is most pronounced in Atlanta, which medical authorities had identified as the country's black cancer capital.

Atlanta's more fitting label may be the "black migration capital of the 1990s," which threw off cancer and census number crunchers like never before. The problem apparently hasn't extended to other diseases. The inaccuracies did not affect Georgia's federal funding, which is distributed by overall population, income levels and demand for programs, not by race.

Census statisticians are still recalculating the new figures, but cancer authorities said they expect the statistics will still show that blacks in Georgia, and nationally, suffer disproportionately higher cancer rates than whites.

PROBLEM POPULATION FIGURES

In U.S. Census Bureau estimations of populations by race, used to determine cancer rates, counties with racial fluctuations that don't mirror the statewide picture often end up with poor estimates, especially near the end of each decade. Here are the figures the census bureau provided for blacks in the five metro Atlanta counties:

County	1990	1999*	2000
Clayton	43,500	58,300	121,900
Cobb	44,900	68,700	114,200
DeKalb	232,700	277,300	361,100
Fulton	325,900	411,900	363,700
Gwinnett	18,600	33,200	78,200
5-county	665,600	849,400	1,039,200

* The 1999 estimates are now being revised. All numbers are rounded.

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“Problem Population Figures”

**“Census Bureau provided” figures for “blacks”
for Atlanta, GA area counties**

County	1990*	1999**	2000*
Clayton	43,500	58,300	121,900
Cobb	44,900	68,700	114,200
DeKalb	232,700	277,300	361,100
Fulton	325,900	411,900	363,700
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* decennial census ** post-censal estimate

source: The Atlanta Journal-Constitution

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Faulty Estimates Led NCI To Overstate Black-White Cancer Disparity In Atlanta

The U.S. Census Bureau underestimated the number of blacks and overestimated the number of whites living in the Atlanta metropolitan area in the late 1990s, an Emory University professor has found.

The total population of blacks in five counties in the Atlanta area was underestimated by 18 percent, while the white population was overestimated by about 10 percent.

These differences have led to significant overestimation of cancer incidence rates for blacks and underestimates of cancer incidence rates

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NCI Programs

Screening Trial Testing

Spiral CT Vs. X-Ray

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Population Estimates by Race Categories . . .

Entail serious measurement issues:

- > the demographic dimensions of age and sex are readily defined, but race category definitions are comparatively vague and shifting
- > how race categories are defined and collected in a census (baseline data) versus vital records (input data) differ, **even when** both sets of category labels are the same

Have implicit assumptions for demographic methods:

- > race can be consistently measured or identified over time
- > birth and death data have comparable race categories to those used for the population
- > migration by race categories is measurable and reasonably estimated by indirect means, if necessary

How Race Category Populations Are Estimated

Which one of the following is the most prevalent method used by demographers in estimating population by race categories for states or counties?

- A. Extrapolation of data by race categories from previous censuses
- B. Incorporation of annual Census Bureau migration flows by race category
- C. Use of administrative record data (i.e., collected from government forms, licenses, etc.) to track population magnitude and movement by race categories
- D. Tracking of race category-linked goods and services from private industry (available on the Internet) and the Census Bureau's periodic Economic Census (directed at businesses), which are then used as a proxy measure for race category-related migration
- E. Directly using race category data from the American Community Survey (from the Census Bureau)

How Race Category Populations Are Estimated

E. Directly using race category data from the American Community Survey (from the Census Bureau)

The Census Bureau's American Community Survey (ACS) currently is in a ramp-up phase before going nation-wide in 2004 (?)

- > designed to replace the decennial census "long form"
- > to be an annual survey of three million households

The ACS will use the same race and ethnicity categories as in the 2000 decennial census (maybe).

How well will the ACS help with population estimates by race categories?

- > data collected can give characteristics, but cannot be used to determine population magnitude by race category
- > sampling design depends on Census Bureau's current population estimates
- > sample size will require three or five years of data in some cases (areas with less than 65,000 population)
- > "continuous measurement" requires continuous funding

How Race Category Populations Are Estimated

D. Tracking of race category-linked goods and services from private industry (available on the Internet) and the Census Bureau's periodic Economic Census (directed at businesses), which are then used as a proxy measure for race category-related migration

In general, private industry does not make its proprietary information and data available to the public, let alone put them on an Internet Web site.

- > Usually, relative growth/decline estimations or forecasts are sufficient for market-driven decisions regarding specific subgroups of a population
- > Such estimates would be too imprecise for Public Health purposes

The Economic Census, directed to the five million businesses in the U.S., occurs in years ending in 2 and 7, but it is not designed to derive information about the general population.

How Race Category Populations Are Estimated

C. Use of administrative record data (i.e., collected from government forms, licenses, etc.) to track population magnitude and movement by race categories

There are very few administrative record data sources that collect information on race categories.

- > birth and death certificates, although an important source, only reflect periodic events that are subject to variation in rate of occurrence
- > school enrollment is only for public schools and directly reflects only a small segment of the population
- > Census Bureau links records to a limited sample of the Social Security Administration data to derive race category information
 - plan to link IRS matched returns data (migration) with 100 percent sample of SSA data, which would include race category and age characteristics, for post-2000 estimates
 - prior to this, county-to-county migration by race categories was from the decennial censuses

How Race Category Populations Are Estimated

B. Incorporation of annual Census Bureau migration flows by race category

The migration flows, say, in and out-migration by county (by race category), are only available from the decennial census.

These data are derived from responses to the decennial “long form” question: “Where did this person live 5 years ago?”

- > in 2000 census, question nearly was eliminated
- > not clear how such information will equate to or be replaced by data derived from the ACS, where it is asked where one lived one year ago and has a different definition of “resident” than the decennial census

It's possible annual migration by race categories will exist for post-2000 estimates based on the Census Bureau's multiple-year IRS returns match, subsequently matched with SSA-derived characteristics.

How Race Category Populations Are Estimated

A. Extrapolation of data by race categories from previous censuses

By far, extrapolation is the most common method for estimating state or county populations by race category.

- > Census Bureau's age/sex/race/ethnicity county-level population estimates extrapolate county-to-county migration flows (pre-2000)
- > extrapolation could be at the age/sex/race cell or entire county/state levels

In summary, population estimation by race categories are limited by:

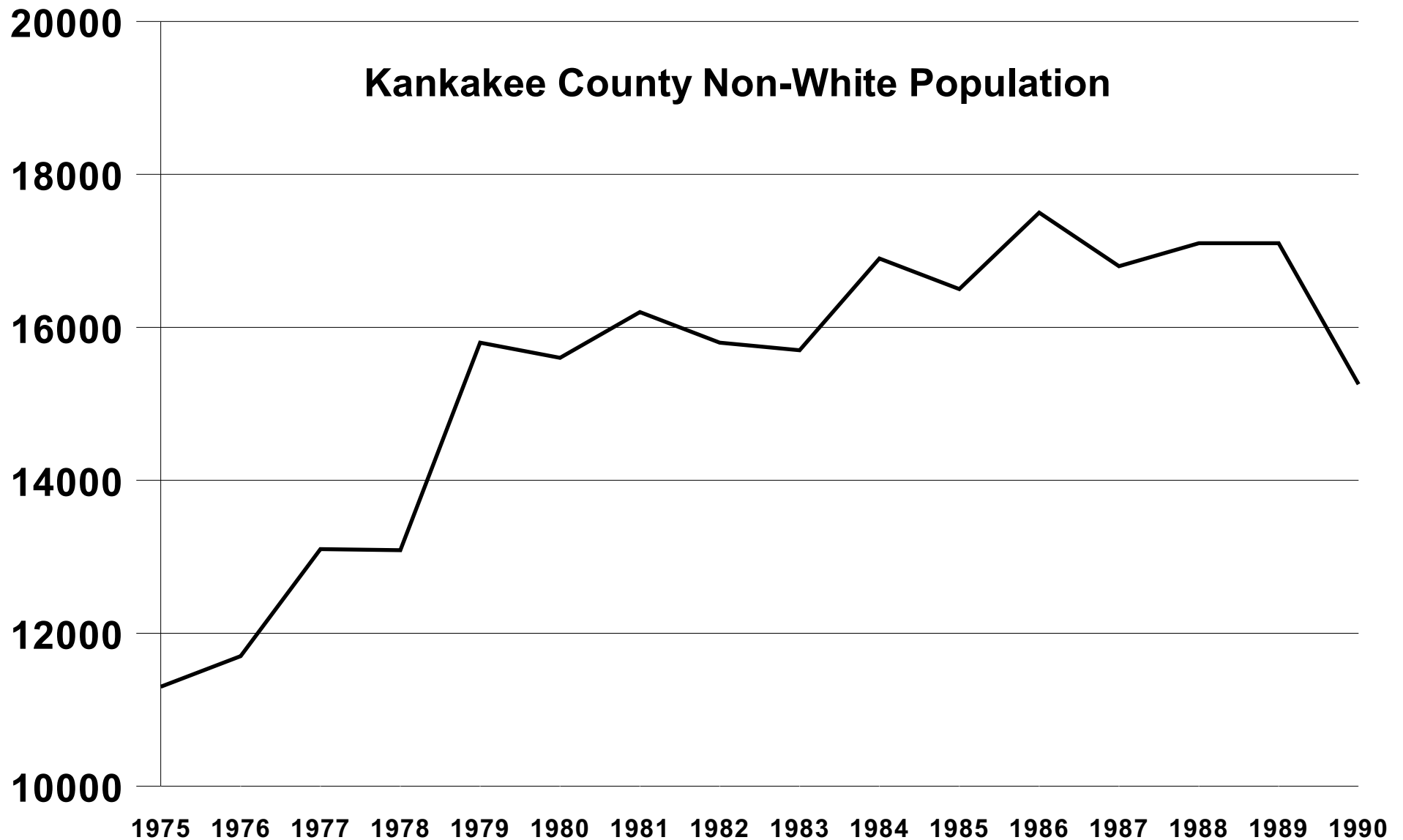
- > lack of symptomatic population indicators by race categories
- > only decennial updating of migration flows
- > non-decennial surveys do not enumerate population

The Illinois Experience

County population estimates by race categories for counties: 1975-1988

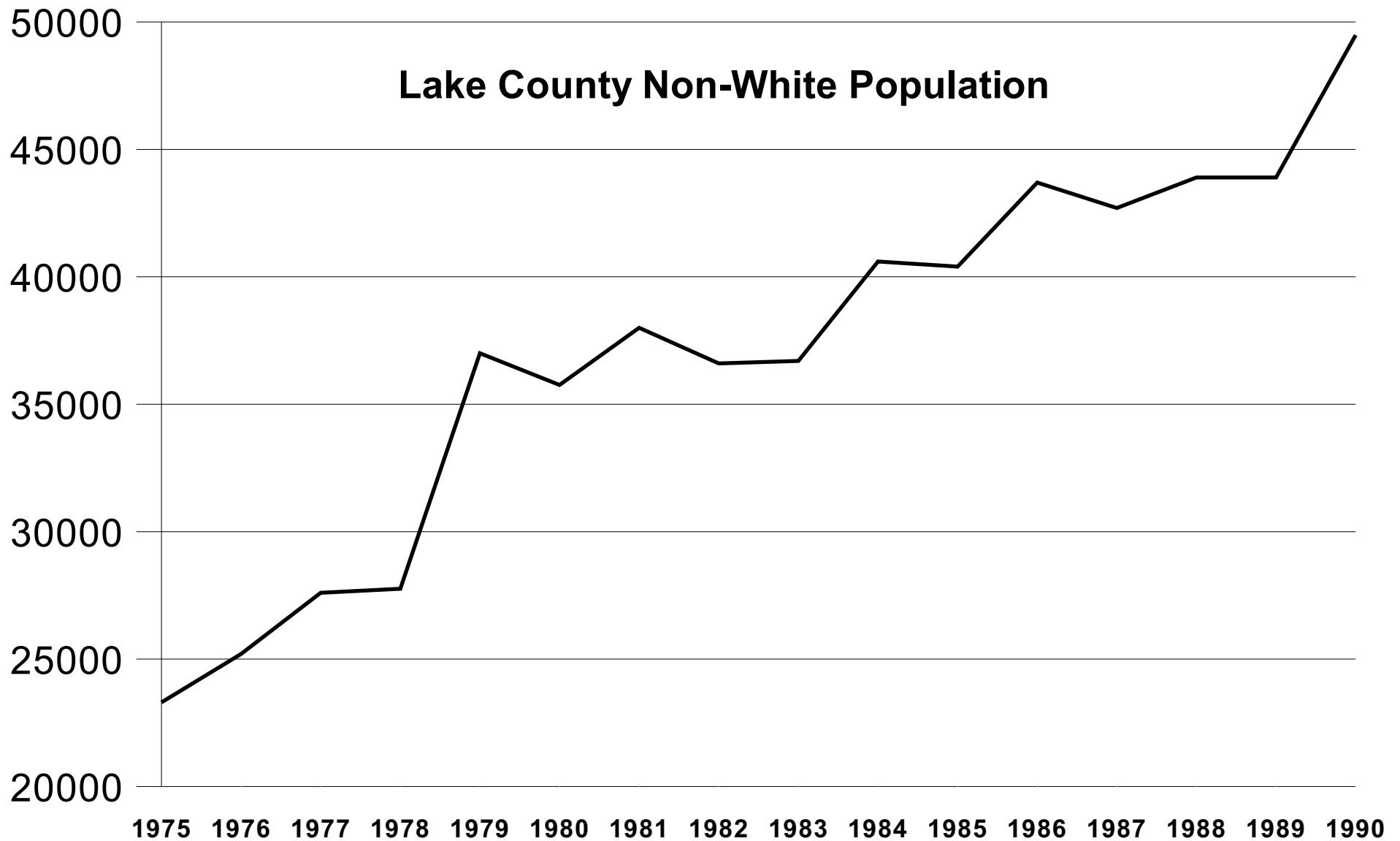
- > for white and non-white race categories
- > extrapolation of age 0-64 years by race categories controlled to an Illinois state total, also extrapolated (based on a ratio)
- > age 65 years and older “ratioed” via Medicare data (i.e., race category data based on administrative records)
- > county race category totals (white + non-white) controlled to county population total based on joint state/Census Bureau methodology (i.e., independent estimation process)

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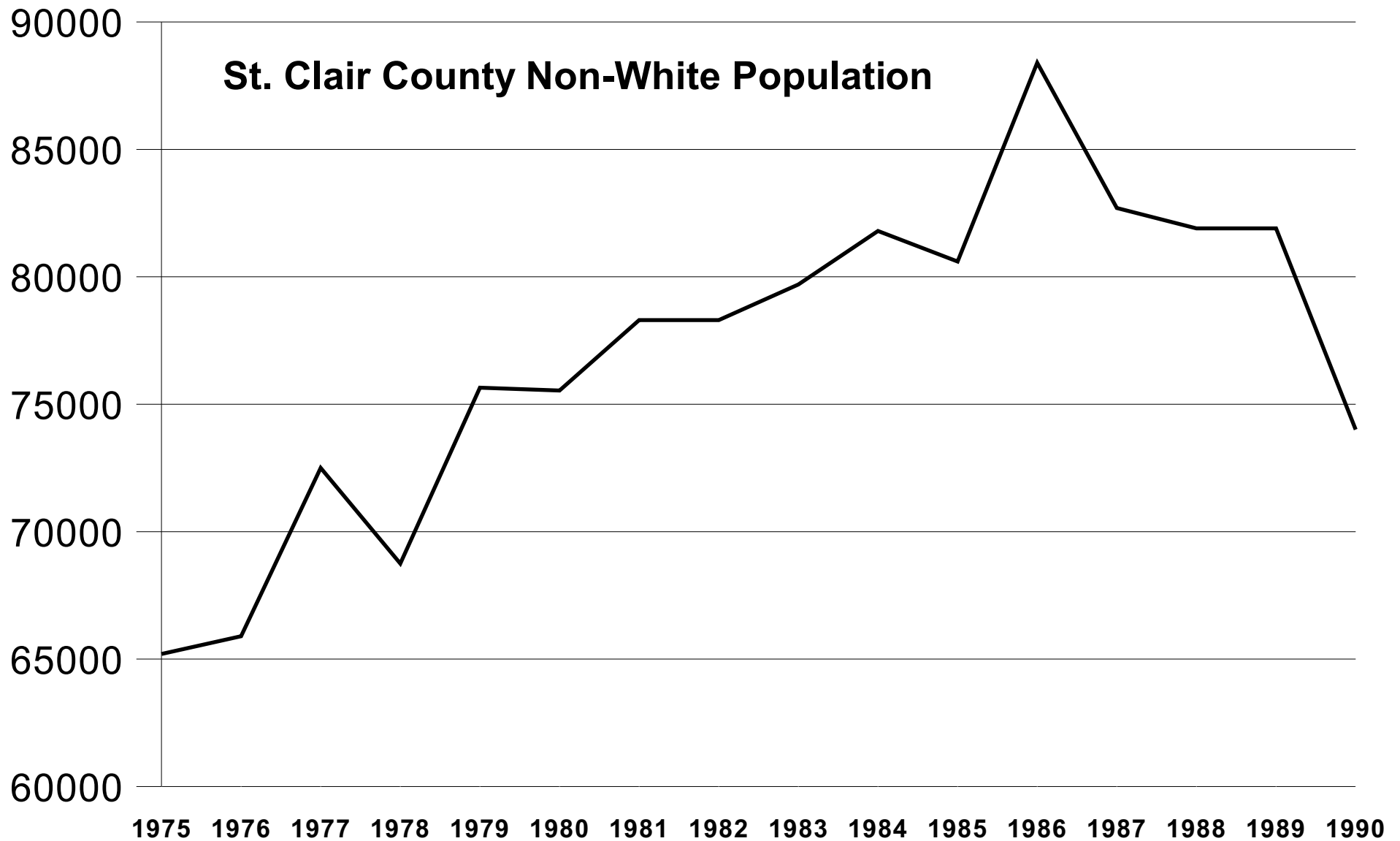
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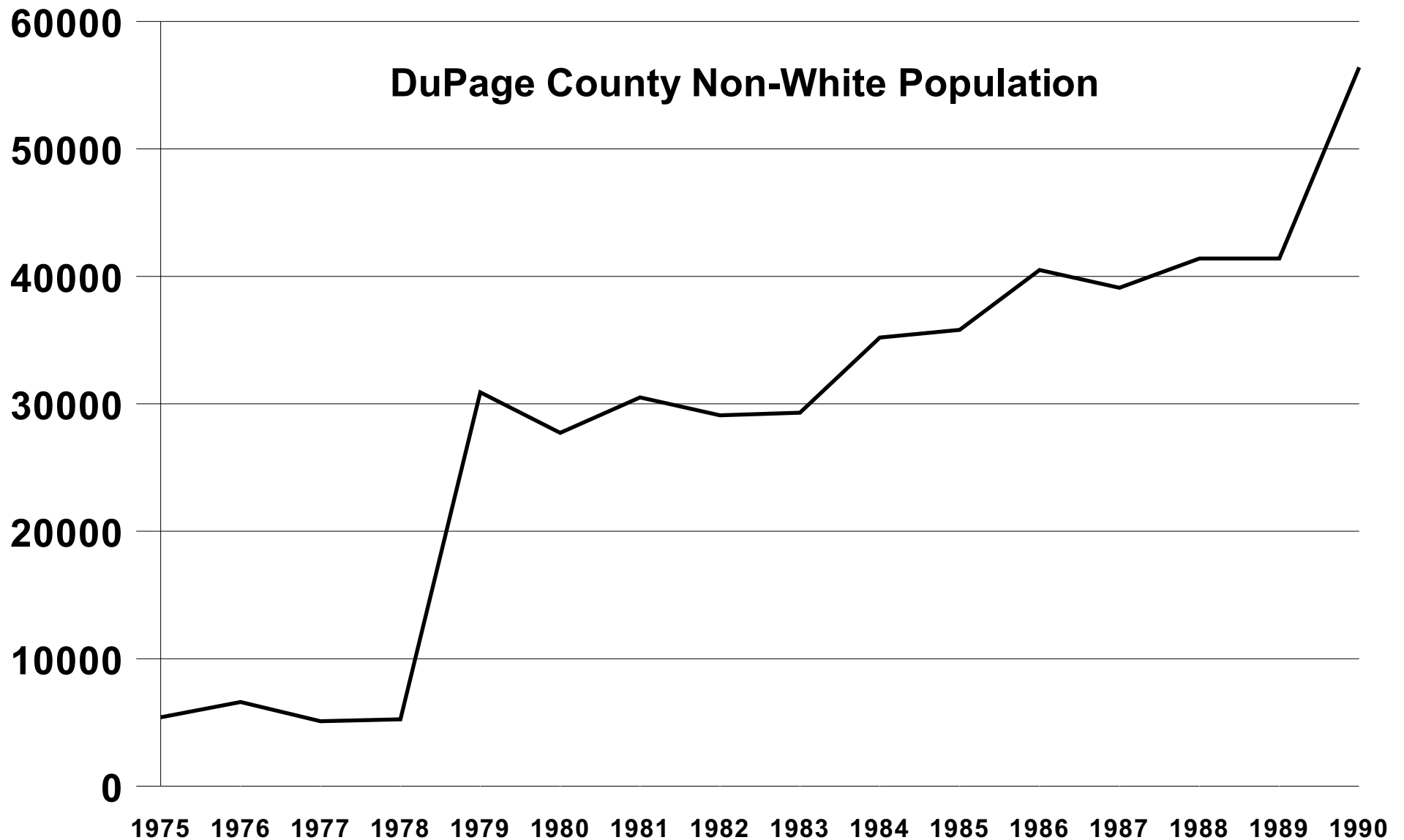
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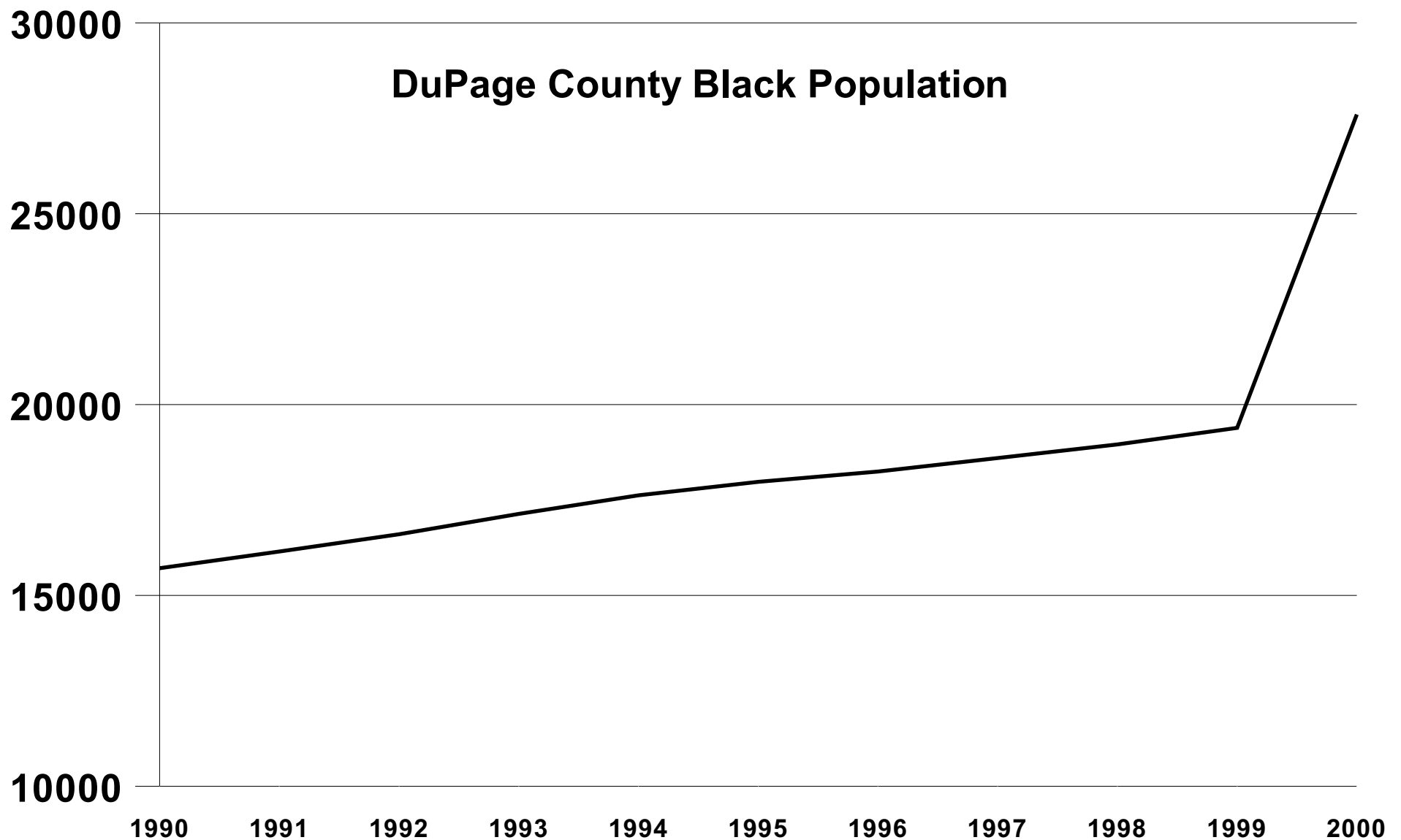
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Source: CDC WONDER System

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Summary and Implications

Post-censal population estimates by race categories are, and have been, problematic.

Added to this difficulty are the differences in race categories between the censuses and their offspring (1990 MARS file and 2000 MR file), the estimated bridged-race file from NCHS and how these population “denominator” data compare to the race categories currently collected through vital certificates, representing “numerator” data.

Summary and Implications

Race category irregularities have an impact on . . .

- > the measurement of health disparities
- > the comparability of time series and other analyses
- > census or population estimate evaluation (e.g., undercount differential)
- > the quality of input data for population estimation

Summary and Implications

In the short term, we, as statisticians and policy makers, have struggled with incompatibilities of race category data for vital events and population.

In the middle term, we have choices regarding strategies for estimating vital rates by race categories.

> the idea of the “asterisk years”

In the long term, we are headed toward a more accurate assessment of diversity by race category within our population.

Contact me at:

Mark Flotow
Illinois Center for Health Statistics
Illinois Department of Public Health
525 West Jefferson Street
Springfield, IL 62761

mflotow@idph.state.il.us

217/785-1064 (ICHS)

217/785-4308 (fax)